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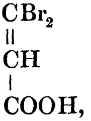
decomposition. It forms irregular rhombic plates, which are very slightly soluble in cold water.

0.6191 grm. of the salt dried over H_2SO_4 gave 0.2660 grm. AgCl.

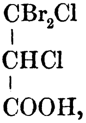
	Calculated for $AgC_3Cl_2BrO_2$.	Found.
Ag	33.03	32.34

Since β-dibromacrylic acid has been shown* to have the structure represented by the formula,



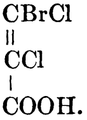
$$\begin{array}{l} CBr_2 \\ \| \\ CH \\ | \\ COOH, \end{array}$$

the chlorine addition-product would naturally have the form,



$$\begin{array}{l} CBr_2Cl \\ | \\ CHCl \\ | \\ COOH, \end{array}$$

and to the corresponding β-bromdichloracrylic acid must be assigned the formula,



$$\begin{array}{l} CBrCl \\ \| \\ CCl \\ | \\ COOH. \end{array}$$

IV. — ON ORTHOIODTOLUOLSULPHONIC ACID.

By Charles F. Mabery and George H. Palmer.

Hübner and Glassner† found that, when paraiodtoluol was dissolved in chloroform and treated with the calculated amount of sulphuric anhydride, two acids were formed, which they called α- and β-paraiodsulfitoluols. On trying the same reaction with orthoiodtoluol prepared from orthotoluidin by means of the diazo reaction, we were unable to effect any change in a chloroform solution, either in the cold or by the application of heat. But when sulphuric anhydride freshly distilled from Nordhausen sulphuric acid was added cautiously to the iodtoluol, at first keeping the mixture cold, and finally heating it for some time, the reaction was easily accomplished. To separate the resulting product from the acid mixture it was treated with an excess of baric carbonate, heated to boiling, filtered, and concentrated on the water-bath. On cooling, the barium salt of orthoiodtoluolsulphonic acid separated in clusters of needles, which were much less soluble in cold than in hot water. So far as it could be determined by any difference in solubility or crystalline form of the barium salt, only one acid was formed. By precipitating carefully with sulphuric acid the barium from a solution of the barium salt, and concentrating the filtered solution on the water-bath, the acid was left as an oily liquid, which did not solidify when cooled to 0°, or on long standing over sulphuric acid.

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* H. B. Hill, these Proceedings, Vol. XVII. p. 151.

† Berichte deutschen Chem. Gesellsch., viii. 560.

Baric Orthoiodtoluolsulphonate, $Ba(C_7H_6ISO_8)_2 . 1\frac{1}{2} H_2O$. — For analysis the barium salt was prepared as above described, and dried at first in the air, then at 100°.

I. 1.2312 grm. of the air-dried salt lost 0.0407 grm. H_2O at 100°.
II. 0.8011 grm. of the air-dried salt lost 0.0300 grm. H_2O at 100°.
III. 0.5967 grm. of the anhydrous salt gave 0.1888 grm. $BaSO_4$.

	Calculated for $Ba(C_7H_2ISO_3)_2 . 1\frac{1}{2} H_2O$.	Found. I.	Found. II.
H_2O	3.54	3.31	3.66

	Calculated for $Ba(C_7H_6ISO_3)_2$.	Found.
Ba	18.61	18.03

Calcic Orthoiodtoluolsulphonate, $Ca(C_7H_6ISO_3)_2 . 2\frac{1}{2} H_2O$. — This salt was prepared by neutralizing the free acid with calcic carbonate, and evaporating the filtered solution on the water-bath. The air-dried salt was heated to 100°.

I. 0.6243 grm. of the air-dried salt lost 0.0414 grm. H_2O at 100°.
II. 0.6250 grm. of the air-dried salt lost 0.0424 grm. H_2O at 100°.

	Calculated for $Ca(C_7H_6ISO_3)_2 . 2\frac{1}{2} H_2O$.	Found. I.	Found. II.
H_2O	6.62	6.61	6.78

0.7298 grm. of the anhydrous salt gave 0.1762 grm. $CaSO_4$.

	Calculated for $Ca(C_7H_6ISO_3)_2$.	Found.
Ca	6.31	7.10

Plumbic Orthoiodtoluolsulphonate, $Pb(C_7H_6ISO_3)_2 . 2 H_2O$. — The lead salt was formed by treating the free acid with plumbic carbonate, filtering, and evaporating on the water-bath. The air-dried salt lost two molecules of crystal water at 100°.

I. 1.2580 grm. of the air-dried salt lost 0.0562 grm. H_2O at 100°.
II. 1.2538 grm. of the air-dried salt lost 0.0512 grm. H_2O at 100°.
III. 0.7176 grm. of the air-dried salt lost 0.0294 grm. H_2O at 100°.
IV. 0.6163 grm. of the anhydrous salt gave 0.2318 grm. $PbSO_4$.
V. 0.6455 grm. of the anhydrous salt gave 0.2425 grm. $PbSO_4$.

	Calculated for $Pb(C_7H_6ISO_3)_2\ 2H_2O$.	Found.		
		I.	II.	III.
H_2O	4.30	4.47	4.01	4.10

	Calculated for $Pb(C_7H_6ISO_3)_2$.	V.	VI.
Pb	25.78	25.75	25.72

An analysis of the free acid gave a percentage of iodine somewhat lower than the calculated value, but further study of it was prevented by the closing of the summer term.